

Pre-20th Century Events Affect Union Carbide History; Division After Division Is Added!

The evolution of Union Carbide was not like Topsy . . . it just didn't grow. The Corporation was formed in 1917 as "Union Carbide and Carbon Corporation." This name and its initial assets, trace back to two earlier events that were to have a profound effect in shaping the Corporation's history.

Following are some brief background facts on the events that make Union Carbide what it is today.

The first event took place in 1876, when Clevelanders crowded into the Public Square to see Charles F. Brush's brilliant carbon arc street light change night into day. This invention sparked the formation of a company in 1886 to make various miscellaneous carbon products — including carbons for electric arc street lights and later carbon electrodes for electric furnaces. The company, which was the forerunner of the Corporation's present Carbon Products Division, brought to the Corporation the famous EVEREADY trade mark. In 1890, it produced the world's first commercial dry cell battery and, in 1894, built one of the first industrial research laboratories in America.

The second event, which was to supply the words "Union Carbide," took place in North Carolina in 1892. In an attempt to make aluminum in an electric furnace, Thomas L. Wilson and Major James T. Morehead produced calcium carbide — and from it acetylene. Although both products were considered mere laboratory curiosities, the optimistic Major Morehead interested several Chicago entrepreneurs in the use of acetylene for city and home lighting. A group of them formed the Union Carbide Company in 1898 to manufacture calcium carbide.

The Gathering Forces

Although Major Morehead had found a market for his carbide, he did not lose either his interest or his faith in the metallurgical capabilities of his electric furnace. With the aid of Guillaume de Chalmot, he produced in 1897 America's first commercial high-carbon ferrochrome and furnished ferrochrome for armorplate during the Spanish-American War.

This metallurgical business was watched with interest by the people who had organized Union Carbide Company, for by this time the advent of electric lighting had killed any hopes they had for expansion of the acetylene lighting business. In 1906, the Union Carbide group purchased the alloys business and also a metals research laboratory. They then set up a separate company to produce alloys for steelmaking — one of the forerunners of the present Mining and Metals Division. Under the direction of Dr. Frederick M. Becket, chief metallurgist, the new company soon had a whole line of alloying metals and made many noteworthy achievements in the metals field. For example, a method was devised for making low-carbon ferrochrome, which made possible the development of stainless steel.

Electrodes Needed

Also pleased by the metallurgical enterprise were the producers of electrodes. Their business, too, would profit from the growth of the alloying industry since carbon electrodes were needed to power the electric furnaces in which the alloying metals were made.

About this time, a further development was taking place in Europe that was to bring into the picture still another company. Scientists in France had discovered that an intensely hot metal-cutting flame could be produced by burning acetylene with oxygen. This discovery resulted in the demand for large quantities of oxygen and of acetylene. Since the latter product was derived from carbide produced in electric furnaces, Charles Brush managed to interest several electrode producers in forming America's first oxygen - producing company in 1907. This company was later to become Union Carbide's present Linde Division.

The success of the oxygen venture quickly caught the attention of the acetylene producers, and in 1911 Union Carbide bought the oxygen company — bringing together for the first time the carbon and carbide interests. Thus the stage was set for further consolidations.

Corporation Is Formed

Up to this point, the largest single purchaser of calcium carbide had been The Prest-O-Lite Company, which was making acetylene lamps for America's expanding fleet of horseless carriages. An alternate source of acetylene was desired, and Dr. George O. Curme, Jr. was hired by Prest-O-Lite in 1914 to find it. At the new Mellon Institute of Industrial Research in Pittsburgh, he met scientists from the Linde Company and from the Union Carbide Company working on other aspects of acetylene research. The mutual interests of these companies — in research, in acetylene, in electric furnaces, and in carbon electrodes — did not go unnoticed. It was decided that the companies' operations would be more profitable if they worked together as a team; and to accomplish this, Union Carbide and Carbon Corporation was formed in November, 1917.

Meeting Wartime Needs

Since the new corporation was established during a time of war, it soon found itself with a number of requests to produce materials never before made in the United States — helium for dirigibles, ferrozirconium for armorplating and activated carbon for gas masks. So urgent was the need for these products that similar requests were also made to other companies.

Fortunately, the newly formed Union Carbide was able not only to produce the materials needed in larger than the stipulated quantities, but also to produce them on or before the requested date. This ability to leap from laboratory - scale operation into immediate full-scale production was to be repeated many times — in World War II, when butadiene, polyethylene, synthetic gem bear-

ings, uranium, energizers for proximity fuses, and cast jet turbine blades were required; in the Korean conflict, when sapphire windows were needed for the Navy's Sidewinder missiles; and in the Cold War and Space Race, when satellite components, space age materials, and huge quantities of liquid fuel were sought.

Synthetic Chemicals

In 1917, with the incorporation of Union Carbide, the need for Dr. Curme's synthetic acetylene had disappeared. The possible need for ethylene for government use, however, renewed the Corporation's interest in the hydrocarbon byproducts of acetylene that were rich in ethylene.

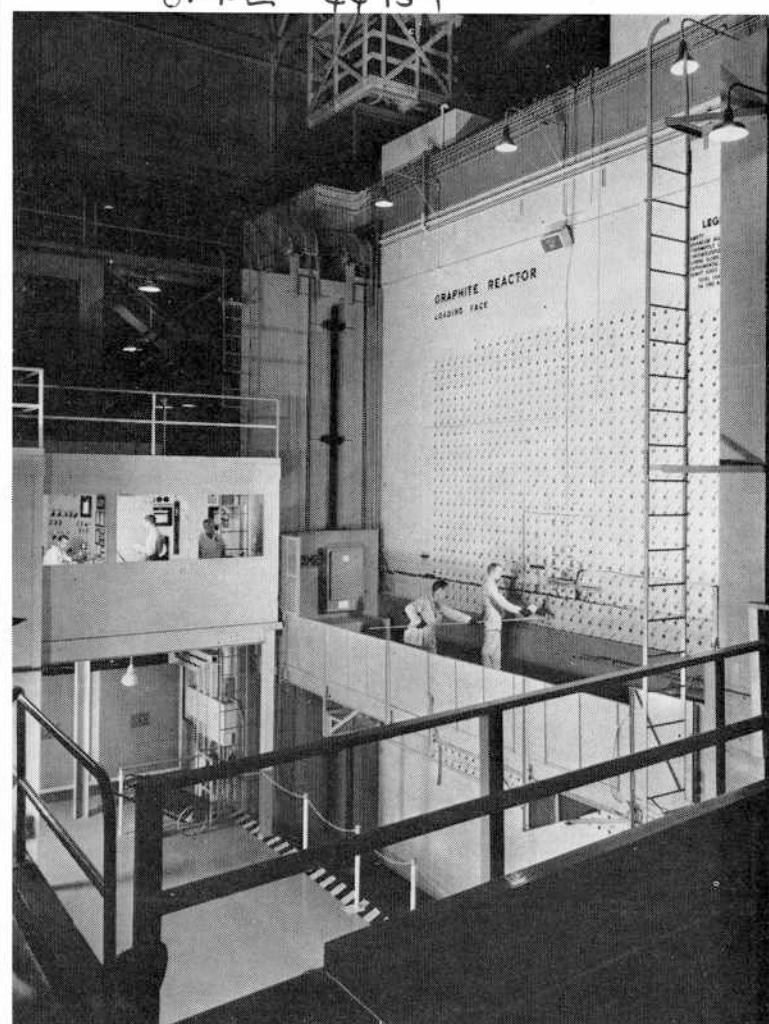
The first production of synthetic ethylene took place in 1919. With the war's end, this project and the chemical activities of the Corporation might well have ceased had not Dr. Curme and an associate — James A. Rafferty — foreseen the growing potential for synthetic organic chemicals. From this vision was born America's petrochemicals industry and the Corporation's chemicals business. In 1920, a new company was formed, which was to become the present Chemicals Division, with its 400 and more products.

Changing Markets Challenge

During the period immediately following World War I, the Corporation found itself faced with the problem not so much of creating new products, as of creating new markets for the chemicals that were gushing out of its pipelines and the many product improvements that were flowing off the drawing boards as a result of its combined research efforts. To meet the challenge, the Corporation pioneered in customer service. It hired technically trained salesmen to spot both present and potential customer needs for the Corporation's products.

To fill a basic need, for example, an anti-freeze for automobile radiators was developed from ethylene glycol — today's well - known PRESTONE anti-freeze. A small battery was developed to make possible portable radios. Quiet, flickerless carbons were available to project the first sound movies. The Corporation also had on hand, when needed, ferroalloys to fortify the steels used to build the skyscrapers, bridges, automobiles, and airplanes that were to change America's landscape; and the raw materials to make the plastics, the synthetic fibers, and the stainless

Continued on Page 4



THE X-10 REACTOR, which produced the first gram quantities of plutonium, and operated for 20 years, was named a Registered National Historic Landmark last week. In special ceremony, the U.S. Department of Interior recognized the site as possessing "exceptional value in commemorating or illustrating the history of the United States." The Graphite Reactor is seen above, during its operational life. It was closed down November 4, 1963, 20 years to the day after it reached criticality.

X-10 Reactor Dedicated As National Landmark

Simple rites last week immortalized the "grand old lady" of the Nuclear Age. The X-10 (or Graphite) Reactor was dedicated Tuesday, September 13, as a National Historic Landmark.

Participating in the dedication were Glenn T. Seaborg, Chairman of the U. S. Atomic Energy Commission; Eugene P. Wigner, Nobel Laureate in Physics and former Research Director of Oak Ridge National Laboratory; Elbert Cox, Regional Director, National Park Service; and Alvin M. Weinberg, Director, ORNL.

The famed Reactor was built during the war to produce for the first time enough Plutonium to enable chemists and chemical engineers to devise a process for extracting this element on a very large scale for use in the atomic bomb. After the war the reactor was used to produce radioisotopes for science, medicine, and industry, and to support research in many fields of physics, chemistry, biology and engineering. The reactor achieved criticality for the first time on November 4, 1943, and operated for 20 years until it was shut down on November 4, 1963.

Speaking at the ceremonies, Chairman Seaborg said in part: "From its secret birth to its reluctant retirement, the graphite reactor contributed immeasurably to the defense of this nation's

liberty, and to the betterment of man's everyday life.

'A Unique Niche'

"Most assuredly the X-10 Reactor occupies a unique niche in the annals of American history and has more than earned its merit as a National Historic Landmark."

The designation of the X-10 Graphite Reactor as a National Historic Landmark coincides with the achievement of full power of 100 megawatts by the High Flux Isotope Reactor, Oak Ridge's modern successor to the X-10 Reactor. Speaking of this coincidence, Dr. Weinberg said, "That a new, much higher powered reactor comes into being, phoenix-like, even as we dedicate an older reactor to history, augurs well for the future. Our newer scientific and technological triumphs must stand always upon the shoulders of older accomplishments."

Other Objectives Added

Dr. Wigner, after reminiscing of the early days of "Bush, Compton, Tolman," also stated, "The Laboratory of which we are guests today also has served successfully its original purpose to develop new concepts for reactors and to create scholarly spirit in nuclear engineering. This was a difficult task, the first of which, at least, will need much further effort. However, as the years went by, many other objectives were added

Continued on Page 4

SAFETY SCOREBOARD

**The Y-12 Plant Has
Operated
27 Days Or
776,000 Man-Hours
Through September 18
Without A Disabling
Injury**
Phone 3-7755
(Unofficial Estimate)
For Daily Report
On Accident-Free Hours

The Bulletin

Published Weekly For The
Y-12 Employees Of
UNION CARBIDE
CORPORATION



NUCLEAR DIVISION

JAMES A. YOUNG *Editor*

Member



Appalachian
Industrial
Editors'
Association

American Association Industrial Editors

OFFICE

Post Office Box Y
Oak Ridge, Tenn. 37830
Bldg. 9704-2 Room 137
Telephone 3-7100

ORCMA Campaign Is Now Underway

The Oak Ridge Civic Music Association membership campaign for the 1966-67 season is currently under way. It will continue through the opening concert, which is set for Saturday, October 15. Guest artist for the opening performance will be Valentin Gheorghiu, Hungarian pianist. Franklin Choset, conductor, will lead the Oak Ridge Symphony.

Included in the 23rd ORCMA season will be a varied orchestra and chorus schedule, a guest artist program and a chamber music series. The Coffee Concert series of free concerts is again planned, with programs scheduled for Sunday evenings.

In addition to the concert set October 15, the guest artist program features Charles Rosen, pianist, November 12; Oberlin Wind Ensemble, February 4; and Charles Treger, violinist, March 18. The Regular Series will be rounded out by Orchestra and Chorus performances December 10, the Chorus Festival of Christmas Music, the Orchestra January 14, the Chorus again February 11, and the joint Orchestra and Chorus production of Mendelssohn's oratorio "Elijah."

The Chamber Music Series includes concerts by the Early Music Quartet October 29, the Julliard String Quartet December 3, and the Balsam-Kroll-Heifetz March 4.

Tickets for either or both of the series may be obtained from Dave Eissenberg, Reactor Division, extension 3-7639, or by writing ORCMA, P. O. Box 271, Oak Ridge. Attention is drawn to the Family Plan which enables all members of the family to enjoy concerts for a modest price. The purchaser of two adult and one child's season ticket will be able to bring all school-age children in the family to see Regular Series concerts free. Also the student rate is one-half the adult ticket price.

Good Housekeeping Helps Stop Accidents

Good housekeeping habits help prevent accidents, make your job safer, too. Only materials needed for immediate processing should be kept in vicinity of machines and piled in an orderly manner clear of aisle space. "Bulk processing needs" should be stored in a separately designated area removed from the production line. Tools when not in use should be kept in racks provided. Waste material should be cleaned up around machinery and oil, grease or water from off the floor. Form the good housekeeping practice of having a place for everything and everything in its place.

Assembly Picnic Draws Big Crowd

Assembly staged its big picnic at the park Saturday, September 10. A host of division families showed up for the balmy afternoon on the lake. Some 160-170 folks enjoyed the games and food (everybody brought his own) and congeniality shared by all.

There were softball games (the Dispatching group won by forfeit ... as Assembly 'chickened-out' at the last moment), horseshoe pitching (Merle Emory talked his way into the championship) a hole-in-one contest (Dick Speaks came within 41" of the hole to take honors) ... a touch football game that ended in a 6-6 tie ... music by the Senators, etc., etc.

The weather was ideal, says picnic planner Dick Spurling.

The Senators, a lively teen-age group, was sparked by A. P. Brown's son ... and friends.

Some of the activities are seen at the left, in various photographs at random throughout the park.

Mostly, everyone just enjoyed sitting, chatting and eating.

Then, of course, everybody brought the youngsters out, too, to show them off! Handsome kids, too. Reports are that the children enjoyed the park especially. The Carbide Recreation Area, though designed for the out-door sports-type ... was thoughtfully planned for the kids, too!

(As a matter of fact, we'd like to ride that flying jenny ourselves, if nobody was looking!)

Metals Society Meeting Tonight

The Oak Ridge Chapter of the American Society for Metals meeting is set tonight, Wednesday, September 21. The subject of the September meeting is one that has mystified millions, satisfied thousands, frustrated a few, and understood by practically no one ... the Stock Market.

If you have questions such as: "How and why to invest?" "Bonds vs Common Stock?" "Why high interest rates and tight money?" "How to hedge against inflation?" "How long the bear market and why?" "Business cycle and speculative growth potential?" then you will want to attend this month's ASM meeting.

David Steine, partner and vice president, Research, J. C. Bradford Company, will be the featured speaker. Steine is also a professor of economics at Vanderbilt University.

The social hour tonight begins at the Holiday Inn at 6:30 p.m. Chicken dinner (\$2.75) will be served ... and the coffee speaker will be UT Associate Basketball Coach Stuart Aberdeen.

October's meeting (Tuesday, October 19) will be held in Knoxville ... and the topic is announced as "What Can Non-Destructive Testing Really Tell Us?"

Quality Control Group Meeting In Knoxville

The Tennessee Section of the American Society for Quality Control will hold its first meeting for the 1966-67 season tomorrow, Thursday, September 22. It will be held at the Senators Club, Knoxville. A social hour will begin at 6:30 p.m. with dinner at 7:30.

William A. Golomski, President of the American Society for Quality Control, will speak on "Who Will be Responsible for Quality in the Future?"

All ASQC members and guests are invited to attend this interesting meeting.



ASSEMBLY DIVISION ASSEMBLED recently at the Carbide Recreation Area, Melton Hill Lake. A family-style picnic brought out nearly 170 folks as division personnel enjoyed the balmy September afternoon. A hole-in-one contest, a softball game (which didn't materialize), and several other games kept everyone occupied, while the children clamored over the flying-jenny, slides, etc. The picnic, the first the division has enjoyed at the Park, was promoted by Dick Spurling, with several fine assistants.



CHEERLEADERS FOR THE WILD CATS this year are co-captained by Nancy Gritzner, daughter of Vern, General Machine Shop. Nancy is at left on the front row. Other boosters include Shelagh Smith, Margaret Frederick and Judy Freels. In the second row are Nancy Armstrong, Lisa Longaker, Belinda Foust and Martha Oden.

Red Barger Is Horseshoe Champ

The Horseshoe Pitching event finally closed the season with the completion of tournament play on last Wednesday night.

Beginning Monday, September 12 (before the rains came—that is) Jesse Luckett (one half of the Barger-Luckett duo who won the Tournament Doubles) started the action at 7:00 p.m. and defeated Y-12's Bill Helms 50-27. Then at 8:15 ORNL's M. H. "Red" Barger (the other half of the winning doubles duo) defeated defeated Y-12's Avery Kendig 52-44 and rain postponed further play until Wednesday, September 14. Action started then at 7:00 p.m. with Frank Zupan, former Y-12'er winning over fellow ORNL'er Jesse Luckett 51-14. N. O. Case took his doubles partner R. S. Durham for forfeit, and M. H. "Red" Barger eliminated Y-12's lone contender, Charles Niemier, with a 51-10 shellacking.

The semi-finals began with Bob Leonard, who was ahead of the field with previous wins over Tip Gray and Bob Lucke, trouncing Frank Zupan 51-24. Again M. H. "Red" Barger took N. O. Case in a good, close match 51-37. This brought two ORNL'ers down to the final wire in the Championship match—and again the "old redhead", M. H. "Red" Barger, became the Tournament Singles Champion by downing Bob Leonard in an extremely well pitched contest by the narrow margin of 51-42.

Thus, "Big Red" Barger is the Horseshoe pitching "Champ of the hour." He and his pitching buddy, Jesse Luckett, taking the League Championship, the Tournament Doubles Champs, and "Red" now the singles Champ. Congratulations on such a record.

Loose talk is very dangerous.



3 Teams Take Early Classic Top

The Classic League keglers entered their second week of play and three teams emerged with shut-out victories. Posting four point wins were the Smelters over the Eagles, Has Beens over the Splinters, and the Screwballs over the Cubs. The Rebels grabbed three from the Wasps, the Bumpers bumped the Rippers, likewise, as did the Tigers from the Playboys, and the Markers grabbed three from the Eightballs. Splitting the points by taking two each were the All Stars and Swingsters.

Individual honors went solely to J. E. Morgan, Swingsters, who made a clean sweep. Morgan posted a 243 scratch single and a 252 handicap single. His scratch series totalled a whopping 646 and handicap of 673. The Bumpers swept all team honors their way with a scratch single of 963 and handicap of 1054. Series-wise it was 2696 scratch and 2984 handicap.

League standings follow:

Team	Won	Lost
Rebels	7	1
Bumpers	7	1
Smelters	7	1
All Stars	6	2
Swingsters	5	3
Has Beens	5	3
Cubs	4	4
Eightballs	4	4
Tigers	4	4
Screwballs	4	4
Rippers	3	5
Markers	3	5
Splinters	2	6
Playboys	2	6
Wasps	1	7
Eagles	0	8

Ball-Room Dancing Instructions Available

Ball-room dance instructions are available to all Carbide employees every Monday night in the Choral Room of the Ridge Recreation Hall.

Beginners' lessons start at 7 p.m.; intermediates at 8; and advanced instructions are held at 9.

All UCC employees, both men and women are invited to attend the instructions. A fee of \$1 per course, per night, is charged.

ACSC Sponsoring Kids' Fishing Rodeo Saturday

The Anderson County Sportsmen's Club is sponsoring a Children Fishing Rodeo this weekend. It will be held at the Jones Pond, near Claxton School, on Edgemore Road, Saturday, September 24, from 2 until 4 p.m.

Everything is furnished and it's all free, advised the ACSC. There are free soft drinks and prizes, too!

Recreation



Saturday, September 24

TURKEY SHOOT, 10 a.m. Oak Ridge Sportsman's Association. E, G, F, H and J Shifts. All Y-12ers welcome. 25c-shot.

Monday, September 26

BOWLING: 5:45 p.m. C League, Ark Lanes.

BALLROOM DANCE INSTRUCTION: 7, 8, 9 p.m. Coral Room, Ridge Recreation Hall.

Tuesday, September 27

PHYSICAL FITNESS: 7:30 p.m., Oak Ridge High School Gymnasium.

Wednesday, September 28

SMALLBORE RIFLE LEAGUE: 7 p.m. Clinton Indoor Range.

BOWLING: 8 p.m. Mixed League, Ark Lanes.

Thursday, September 29

BOWLING: 5:45 p.m. Classic League, Ark Lanes.

PHYSICAL FITNESS: 7:30 p.m., Oak Ridge High School Gymnasium.

Mustangs Muster Mixed Alley Lead

The Y-12 Mixed Bowling League entered its second week of the season strong. The only four point win of the evening found the Mustangs "goose-egging" the Twisters. Three point winners were the Novices over the Alley Cats, the Goofers took the Rollers, and the Hits and Misses took the Roses 'N Thorns.

Barbara Hackett of the Roses 'N Thorns almost got away with all individual female honors, taking the scratch single with 188, handicap single with a 218, and scratch series with a 459. Lib Scates, subbing with the Hits and Misses, took handicap series with a 580. Man-wise it was Bob Haggood of the Goofers with a scratch single of 193 and a handicap single of 222. Roy Scates, Mustangs, took scratch series with 511 while M. L. Cooper, Novices, took handicap honors with 610. Team-wise it was Roses 'N Thorns with a scratch single of 638, the Novices with a handicap single of 806, while the Mustangs took scratch series with 1786, and the Hits and Misses took handicap of 2263.

League standing follows:

Team	Won	Lost
Mustangs	7	1
Twisters	4	4
Goofers	4	4
Rollers	4	4
Hits and Misses	4	4
Roses 'N Thorns	4	4
Novices	3	5
Alley Cats	2	6

Junior Rifle Club

Sponsors Marksmanship

A course in basic rifle marksmanship will be offered by the Anderson County Junior Rifle Club, beginning tomorrow, Thursday, September 22. The six-weeks course will be held from 6:30 until 8:30 p.m. each Thursday at the Anderson County Club House, Clinton City Park.

The course is open to boys . . . eight to 18 . . . and girls 10 to 18 . . . and is limited to 20 students. Cost for the entire instruction is \$3.50.

Reservations may be made through R. L. Lines, Oak Ridge telephone 483-0288, or extension 3-6924.

DUSTING WITH GLAD

Plastic wrap can be used as a dust cloth for furniture. "Glad" Home Service experts report the wrap will pick up dust and not spread it around.

Y-12 Teams Advance In Softball Play

With league play awaiting a playoff for the Championship, softball tournament play got underway Monday, September 12 in a single elimination event. Opening in the City's Midtown No. 1 Park at 6:00 p.m. the Y-12 Fireguards ousted ORNL's Peanuts 10-6. The Fireguards hit consistently with the only extra clout being Jim Disney's double. Jim Gibson homered for the losers. For the Fireguards it was 10-15-2, and 6-10-3 for the Peanuts. At 7:15 p.m. Y-12's Big Shops downed ORNL's Sluggers by a verdict of 13-7. Leroy Hardin tripled while Roger Smith and Curtiss Parker hit round trippers for the Losers. For the Big Shops Harold Brendle tripled and R. E. (Shorty) Gibson hit one out. Final results found the Big Shops with 13-17-1 and the Sluggers with 7-11-7. Rain postponed the third game between the Naughts and the Bat Boys.

Braves Advance

Wednesday night's action started with scheduled tournament play at 6:00 p.m. in Midtown No. 1 Park with two Y-12 teams. The Braves trumped the Fireguards 27-7. The only extra base hits in the entire game were doubles by the Braves' Conrad Strike, John Evans, and Ray Riggs. The Fireguards rallied for five runs in the seventh but by this time "the die was cast" and five was "too little and too late". For the Braves it was 27-30-0 and the Fireguards 7-10-0. At 7:15 p.m. ORNL's Red Devils eliminated Y-12's Big Shops from further tournament play by a convincing 18-2 score. Big guns for the Red Devils were triples (one each) by Hollis Stakes, Tom Coffey, Milford Payne, and Tom Grizzard. The eight hits garnered by the Big Shops were all one baggers. It was 18-21-0 for the Devils, 2-8-0 for the Big Shops. Isotope-Reactors and K-25 Mets concluded Midtown's evening play at 8:15 with lively and spirited play with the Reactors emerging victorious, 14-9. For the winners Roy Nabors, Carlos Brooks, and Butch Armistead had doubles while Don Tidwell had a three bagger and Steve Cates and Bob Cooper had doubles for the losers. The fourth inning was the big one as the Reactors piled up twelve runs. For the Reactors it was 14-20-0 and the K-25 Mets 9-17-0.

Bio Wins Narrowly

While the above action was taking place at Midtown No. 1, action was also fast and furious across town at Pinewood where Tuesday night's rained out games were underway. Beginning at 5:45 p.m. with two ORNL teams, Health Physics overwhelmed the Ecobums by 11-1. Ken Burton doubled for the winners and Bernie Patten, of the Ecobums, did likewise. For Health Physics it was 11-15-2 and Ecobums 1-9-3. At 7:00 p.m. the X-10 Mets completely "cow tamped" Y-12's Falcons 23-1. Tuck and LeTellier each homered for the Mets. It was the Mets 23-24-21, and Falcons 1-10-5. In the tightest contest of the evening, the 8:15 p.m. schedule brought Bio and K-25 Sports together in a "curtain raiser" with Bio finally eking out by 13-12. Ed Bailiff hit for the circuit for Bio while Jerry Howard and Sam Duncan hit circuit clouts for the Sports. The finish found Bio with 13-13-4, and the Sports 12-16-1. Concluding the night's action at Pinewood at 9:30 p.m. found Y-12's Bat Boys taking ORNL's Naughts by 13-8. The Bat Boys made 13 runs on 13 hits and committed 6 errors while the losing



Shifters Planning Big Turkey Shoot

E, F, G, H and J Shifts are at it again . . . this time it's a big turkey shoot.

All Y-12ers are invited Saturday 24, beginning at 10 a.m. at the Oak Ridge Sportsmen's Association range. Firing is only 25 cents per shot . . . ammo furnished on the spot.

Now's a good time to lay away that old bird in the freezer for the up-coming holidays. And have fun in the process.

That's Saturday, September 24, at 10 a.m. at the ORSA range . . . on the west end of town.

C Bowling League Hits The Alleys!

Another big Y-12 bowling league hit the alleys last week . . . as the C League began its 12-team competition.

Opening night saw four teams take four-point wins from victims, as the Rounders routed the Hi-Lifers; the Rollmasters rolled past the Fireballs; the Strikers struck the Royal Flush, and the Invalids invalidated the Badgers.

The Sunflowers won three points from the Parbusters, as the Big Five posted the same count victory over the Rodders.

Frank Winstead, Rollmasters, took a high single count, 222 scratch, 252 handicap. E. V. Hawk, Sunflowers, was high on series scoring with 559 scratch, 622 handicap.

The Sunflowers rolled a 900 scratch single total . . . and series of 2544 scratch, 2868 handicap. The Big Five put up a 1930 handicap single.

League standings follow:

Team	W	L
Rounders	4	0
Rollmasters	4	0
Strikers	4	0
Invalids	4	0
Sunflowers	3	1
Big Five	3	1
Parbusters	1	3
Rodders	1	3
HiLifers	0	4
Badgers	0	4
Fireballs	0	4
Royal Flush	0	4

Full Attention Demanded By Motorist At All Time

A child darts into the street after a ball, a motorist opens his car door on the street side to get out of a parked car, a bicycle is suddenly in your path. Things happen so swiftly, you just have to stay alert. When behind the wheel of your car give your full attention to driving safely.

Naughts had 8 runs on 9 hits, and committed 8 errors. George Reece homered for the winners.

Thursday's schedule games were rained out . . . and one game got squeezed in Friday night.

The Y-12 Eagles downed the Clowns 11 to 6 . . . in a pretty fair game. Hugh Richards poled a homer for the Eagles, as well as hitting four for four.

Tournament play was to be resumed this week, weather permitting.

UNION CARBIDE CORPORATION
NUCLEAR DIVISION
 RETURN POSTAGE GUARANTEED
 Post Office Box Y
 Oak Ridge, Tennessee—37830

BULK RATE
 U.S. Postage
PAID
 Oak Ridge, Tenn.
 Permit No. 71

Physicists Attend World-Wide Meet

Nuclear physicists from throughout the world gathered in Gatlinburg last week for an International Conference on Nuclear Physics.

The conference, arranged by Oak Ridge National Laboratory, offered participants an opportunity to exchange information on the basic structure of nuclei, the detailed way they are put together, and the forces that hold them together.

The six-day meeting, which began September 12, was co-sponsored by the International Union of Pure and Applied Physics, the U. S. Atomic Energy Commission, and the National Science Foundation. This marks the first time the biennial event has been scheduled in the United States.

Reflecting the international tone of the conference were 21 principal reports by physicists from the United States, Canada, France, Denmark, Germany, Switzerland and the USSR. In all, about 750 physicists from 30 countries participated.

In addition to the invited papers, 280 contributed papers dealing with the most recent results obtained in the field were presented during the 10 sessions.

New Commissioner Visits Oak Ridge

Samuel M. Nabrit, new commissioner of the U.S. Atomic Energy Commission, attended ceremonies last week at Oak Ridge National Laboratory for the dedication of the X-10 Graphite Reactor as a National Historic Landmark.

Dr. Nabrit remained in Oak Ridge for briefings on ORNL, Y-12, the Oak Ridge Gaseous Diffusion Plant, the city of Oak Ridge and the UT-Farm facilities.

The new commissioner was sworn in on August 1, succeeding Mrs. Mary I. Bunting, for a term expiring June 30, 1970. He was president of Texas South University for about 11 years.

Commissioner Nabrit was associated with Atlanta University for 23 years, serving in the Department of Biology and as Dean of the Graduate School of Arts and Sciences. He received his BS degree from Morehouse College and his MS and PhD from Brown University.

Pakistan Lecturer Guest At Joint Seminar Friday

A Joint Physics-Neutron Physics Division seminar will be held this week. S. A. Durrani, Pakistan Atomic Energy Commission, will be guest lecturer. He will speak on "Average Cross-Sections for Half-Lives of ^{197}mAu and ^{89}mY Excited by Inelastic Scattering of Reactor Neutrons."

The seminar is set Friday, September 23, at 3:15 p.m. in the East Auditorium of ORNL's 4500 Building.



Riders wanted from South Knoxville to any portal, straight day. W. H. Sherrod, plant phone 3-7077, home phone Knoxville 577-0295.

Riders wanted from Washington Pike, North Hills area, Knoxville, to East or North Portal, straight day. F. E. Clevenger, plant phone 3-5095, home phone Knoxville 522-7393.

Two riders wanted from Smithwood, Inskip, Cedar Lane area, Knoxville, to any portal, straight day. Bill Cochran, home telephone Knoxville 687-6836, plant phone 3-5445.

United Giving Is Simple A B C!

It's as simple as A B C, this business of united campaigning for voluntary health and welfare services.

Take A. That's for accountability. United Fund Campaigns conduct their business as a public trust. Organized by responsible citizens working without pay, United Fund drives endeavor to provide the best service possible for the greatest number of people.

B stands for budgeting, the key-stone of wise use of funds to meet real needs.

The C is cooperation and there is plenty of that in united campaigning. Agencies, volunteer planners, volunteer campaigners and, most importantly, generous contributors join together in America's greatest philanthropic effort... a once-a-year campaign for 34,500 voluntary services serving more than 25,000,000 families.

Y-12's United Fund Drive begins soon.

Coffee Concert Set Sunday In Oak Ridge

The Oak Ridge Civic Music Association will present its first Coffee Concert Sunday. It is set Sunday, September 25, at 7:30 p.m., at the Unitarian Church, Oak Ridge Turnpike. Another concert will be set at 9 p.m. the same night.

Instrumental ensembles from the Oak Ridge Symphony Orchestra under the direction of Franklin Choset, will be featured. The program includes Prokofiev's "Overture on Hebrew Themes," Ives "Unanswered Question" for strings, flutes and trumpet, and Villa-Lobos "Bachianas Brasileiras" for soprano and orchestra of eight violin celli, featuring Jackie Ball soloist.

Coffee Concerts are free to the public... and will give concertgoers the opportunity to obtain season tickets for both the Regular and Chamber Series.



Autumn days are ushered in on the heels of Summer, as Y-12ers are added to the veteran status. Congratulations.

20 YEARS

Frank Morgan, Buildings, Grounds and Maintenance Shops, September 26.

15 YEARS

Rhea S. Hickey, Electrical Department, September 21.

Ulyses Hatmaker, Production Assay, September 24.

Eldridge Payne, Janitors Department, September 25.

Mattie R. Marlar, Production Assay, September 27.

Clarence D. Wells, Beta Two Shop, September 27.

X-10 Reactor

Continued from Page 1

to the original ones. Oak Ridge National Laboratory now excels nationally the many areas of research; it now also has much equipment unparalleled anywhere in the world. It has provided a source of strength to the South in its effort to catch up with the scientific development of the older homes of research in the natural sciences. It assumed new technical problems such as desalination and also civil defense, in which I am deeply interested myself and which I consider a crucial important for the security of the nation. This is a variety of tasks, a variety of objectives each of which deserves the best thoughts of many able and devoted men. Yet, when I am ending my address with a wish, this is today for the overall success of the Laboratory in achieving its technical objectives, and in remaining an institution from which ideas and men can emerge to help this nation to prosper and to progress further."

The program included the unveiling of a bronze plaque which marks the Reactor as a site possessing historical value.

University Women Set First Meeting Monday

The Oak Ridge Branch of the American Association of University Women will hold its first general meeting next week. The meeting will be held Monday, September 26, at 8 p.m. at the United Church Fellowship Hall. Mrs. John Franklin will present a program on fellowships. Last year AAUW fellowships for advanced research and study were awarded to 104 women working in the natural and physical sciences and the humanities.

General meetings are held on the fourth Monday of each month. Interested groups on investments, law, books and cooking also hold monthly meetings. AAUW membership is open to all women graduates of accredited colleges. For information, call Mrs. George Strasser, membership chairman, Oak Ridge telephone 483-5017.

Joint Seminar Set Tuesday, September 27

There will be a joint Physics-Solid State Division Seminar next week. P. A. Egelstaff, Atomic Energy Research Establishment, Harwell, will discuss "Radiation Scattering Data on Liquid Metals."

The seminar is set for Tuesday, September 27, at 3:15 p.m. in the East Auditorium, Building 4500.

Pre-20th Century Events Affect Union Carbide History

Continued from Page 1
 steels that would change our way of life.

Vanadium Added

To round out its ability as a one-stop materials and service center for American industry, the Corporation added to its metallurgical capacities in 1920 the technology of what is now its Stellite Division; and acquired, in 1926, vanadium interests on the Colorado Plateau, which were later to furnish uranium for atomic energy. To its carbon activities, it added the graphite skills of the Acheson Graphite Corporation in 1928.

The wide range of the Corporation's activities was made evident at the Chicago World's Fair in 1933, when Union Carbide alone was able to supply for display purposes more than half of the known chemical elements. It is of interest to note that today, with all its many interests, Union Carbide works with about 90 of the chemical elements that have been isolated and named so far by scientists.

By 1937, the clouds of war were once again darkening the world, threatening the flow of supplies from overseas. The Corporation turned its attention to further development of its raw material resources and to finding uses for the by-products of its production.

Synthetic Stones Born

Research on the tailings of vanadium was to provide uranium black, catapult the Corporation into the government's atomic energy program, and provide the basis for the Corporation's position as one of the most diversified private enterprises in the field of nuclear energy. Government need and a background of research in flame technology was to lead to the production of synthetic sapphires and rubies and the famed LINDE Stars; and high-pressure research, to America's first commercial polyethylene.

In 1939, Union Carbide resumed its butadiene studies, begun many years before, which were to make America's synthetic rubber program a success. In the same year, the Corporation acquired the Bakelite Corporation—the outgrowth of the country's first phenolic plastic and the ancestor of the present Plastics Division.

Canadian Company Formed

With the war's end and the reopening of overseas supplies, the Corporation decided to consolidate activities that were becoming increasingly important, and to set up separate divisions for them. In 1950, a division was established to handle worldwide ore procurement. (This Ore Division became a part of the Mining and Metals Division, when it was formed early in 1965.) Since overseas operations were expanding, Union Carbide International Company was set up as a division of the Corporation in 1951. Then, in 1954, Canadian operations were consolidated into one company—Union Carbide Canada Limited.

In 1955, the Corporation's interests were further extended with the formation of the Silicones and the Nuclear Divisions to follow up research begun in these areas in 1937; and with the purchase in 1956 of the Visking Company (now the Food Products Division), which produces food casings. Then, in 1957, the Olefins Division was formed to supply the basic hydrocarbon "building blocks" needed for chemicals and plastics production.

New Consumer Markets

By 1957, Union Carbide and Carbon Corporation had some 400 plants in the United States and Canada and had affiliated companies in many countries overseas. In that year, to take advantage of the growing public awareness of its activities, the Corporation shortened its name to Union Carbide Corporation.

A separate division was set up in 1959 to handle consumer product sales. The two principal product lines of the Consumer Products Division are EVEREADY batteries and PRESTONE anti-freeze, the same ethylene glycol product first produced by Union Carbide in 1926—which still holds the top position in the extremely competitive anti-freeze market.

In 1960, already spread out through 14 separate buildings in New York City, the Corporation moved into new headquarters at 270 Park Avenue—a 52-story skyscraper of gleaming stainless steel and glass. This is the nerve center of Union Carbide's far-flung operations around the world.

Consumer Products

As the Corporation entered more and more new business areas, it found itself in many instances moving a step or two closer to the ultimate consumer—introducing, for example, new plastic household products and baby products.

Then, in 1964, the present Fibers and Fabrics Division was formed—an outgrowth of the Chemicals Division—to promote products associated with the textile and related soft goods industries.

In 1965, the Mining and Metals Division was formed—consolidating the activities of the former Metals and Ore Divisions and the mining and processing operations of the Nuclear Division.

The rapid growth achieved by the Linde Division in the electronics business, and the unusual opportunities existing in this field, led to the formation of an Electronics Division in mid-1966.

About the same time, international operations were restructured and new subsidiaries were set up to oversee foreign activities. Union Carbide Eastern, Inc. is responsible for the Far East; Union Carbide Europe, Inc., for Canada and Latin America. Other subsidiaries were formed for African operations: Union Carbide Middle Africa, Inc. and Union Carbide Southern Africa, Inc.

'Case Of Libel' Trials Scheduled For Monday

The Oak Ridge Playhouse will hold try-outs next week for its second play of the season, "A Case of Libel." A total of 13 men and three women are needed for the cast of this drama, opening for six performances Friday, November 25. The try-outs are set next Monday, September 26, at 7:30 p.m. at the Playhouse. No previous dramatic experience is necessary and readings are open to the entire community.

"A Case of Libel" is the hit drama based on a famous trial between a well-known war correspondent and an equally well-known columnist. The case, which was won by Louis Nizer, was one of the most exciting and dramatic in the constant battle of freedom of the press. The cast includes several lawyers, a judge, two secretaries, the principals in the trial, the correspondent's wife, court clerk, and jury foreman.